ONDERZOEKSRAPPORT NR 9111

BIDDING, NEGOTIATIONS, AND TAKE-OVER PRICES

by

C. Van Hulle and P. Sercu

D/1991/2376/15

Bidding, Negotiations, and Take-over Prices

by

C. Van Hulle and P. Sercu,

K.U.Leuven, Belgium

One of the unresolved issues in corporate restructuring is the distribution of take over gains. Empirical evidence indicates that in take-over bids most of the benefits are captured by the target shareholders under the form of large price premiums. The standard view, in academia, is that these premiums are determined by competition among bidders (or the threat of competitive bids); bargaining, although often observed in practice, has no place in this framework. We argue that bargaining is an important ingredient of a take-over, even in hostile situations; in fact, we deal almost exclusively with "unfriendly" take-overs, i.e. acquisitions where the target's current management has to leave. The paper also highlights how bidding and bargaining interact and generate the take-over price. We find that bargaining is likely to be the most important part of this process. The paper therefore also discusses several factors that may influence the bargaining position of corporate control contestants, such as the effects of time value of money, competition, financial strength and initial toeholds on the bargaining position of the contestants.

To show how bidding and bargaining interact, we will consider a simple numerical example. Admittedly, our setting may seem overly simple in many respects. But the purpose is to lay bare the nature of the interaction between bidding and bargaining, and the factors that influence the bargaining strength of the parties seeking corporate control. We feel that

these basic insights are also likely to be relevant in more complicated and more realistic situations.

The paper is organized as follows. We first show how take-over prices are determined in a world in which bargaining is impossible. (The reader is warned that outcome of this analysis is decidedly odd.) We then consider take-over prices in a more realistic setting where both bidding and bargaining can occur, and show how the outcome seems to be more intuitively acceptable. Next we focus on how initial toeholds, competition in the take-over market and financial strength may influence the offer price. The final section summarises the paper.

1. The remarkable implications of a pure bidding situation.

To fully appreciate the interaction of bargaining and bidding as a determinant of a take-over price let us first consider a hypothetical world in which no bargaining exists and in which all take-overs are realized through a pure bidding process. For simplicity, we consider full buyout offers only.[1] The impossibility of bargaining of course implies that once the shares of the target are acquired, ownership can no longer be transferred through subsequent negotiations. Or put differently, the initial assumption is that control over a target firm is permanently allocated to the winner of the bidding contest.

Let's introduce the contestants. One chief actor is the group currently in control, denoted by C. For concreteness we assume (as is the case for many

---

1. Sercu and Van Hulle [1990] consider also partial buyouts; all insights continue to hold also for the latter type of offers.

firms) that before the take-over, the target firm is controlled by a large shareholder or group of shareholders, which appoints management and determines corporate policy. Under C's control, the target company's shares are worth $S_C = 800$. This S_C is equal to the total number of shares times the current value per share of the target company, and stands for the present value of future dividends expected under its current management. C, as a major stockholder, of course has a share in these dividends. In addition, C receives some control benefits from this target firm (e.g. through transfer pricing or synergies with other firms owned by C); these private benefits have a present value $Z_C = 600$. Assuming that C initially owns 30 % of the target's shares, this implies that C's total benefits are worth, in present value terms, $(.3 \times S_C) + Z_C = (.3 \times 800) + 600 = 840$.

C's antagonist is a (ultimately successful) bidding company, B. Initially this firm B owns a toehold of 10% in the target. As B is not part of the controlling group, it doesn't share in the private benefits of control. That is, before the take-over B receives, in present value terms, $.1 \times S_C = .1 \times 800 = 80$ in benefits from the target. If B would take over the firm, improved management policies would drive up the total value of the target's shares to $S_B = 1300$. In addition, B would be able to reap control benefits worth $Z_B = 700$. To sum up: under C's management team the target generates benefits for a total economic worth of $V_C = S_C + Z_C = 800 + 600 = 1400$; under B's management this total economic worth would increase to $V_B = S_B + Z_B = 1300 + 700 = 2000$. Clearly B is better fit to manage the target.

The chorus in our play is formed by the many small third shareholders that, together, own the remaining 60% of the shares. The role of this group is passive: they just tender (or don't tender) to bids offered by B or C. For simplicity we assume that the initial ownership positions of C and B are

known to C and B, and that everybody agrees on the values of S_C, V_C, S_B and V_B. Obviously this perfect information assumption is unlikely to hold in reality; but we will see later on that the basic arguments continue to hold even when information is imperfect. Finally we suppose that C can defend its position in the target company by launching counterbids. To finance such an MBO (or, at least, to lend credibility to the threat of a counterbid) we initially presume that C can easily and quickly raise cash; for instance, C has access to the junk bond market. We will discuss the consequences of dropping this assumption when we investigate the importance of financial strength in Section 3.3.

The issue is what price B will have to pay for the target company.

1.1. B Has to Pay Out All its Private Benefits.

A first requirement is that the price be "realistic" in the sense that it is likely to convince the small shareholders. This requirement imposes a first floor to B's price p_B: p_B should exceed the post-bid stock price. To see this, assume that B offers 1320. By tendering, the other stockholders are better off than by holding out, whoever wins the contest: 1320 exceeds the value 800 of the shares when C wins, and also the stock price 1300 if B ends up in control. Nor do the small shareholders forego possible better offers later on if they tender immediately. Under current legislation in most Anglo-saxon and European countries, shareholders that immediately tender to a bidder are entitled to any better price subsequently offered by that bidder within the offer period. Likewise, if within the offer period another bidder with a better offer comes along after some shareholders have tendered, the latter may withdraw their shares and tender to the better offer. In our simple setting,

rational small shareholders will therefore certainly grasp this opportunity and tender as soon as the offer exceeds S_B = 1300.

A second floor for a successful bid price p_B is C's total valuation of the target, 1400, i.e. the total worth that C can obtain if it fully owns the company. If B would initially offer say p_B = 1320, it would be in C's best interests to launch a counteroffer at say p_C = 1350. To see this, note that when C succeeds in buying out everyone at the price p_C = 1350, the value of C's hand would be the total company[2] (worth 1400) minus the cost of buying out the 70% of the stock at (.7 x 1350) = 945, i.e. 1400 - 945 = 455. This is better than C's remaining alternative, viz. to sell the 30% block at (.3 x 1320) = 396.[3] B's bid 1320 will therefore surely trigger a counterbid from C. It is easily checked that, if B offers p_B = 1400, C will not rationally take private the firm with an offer of say 1401. So, once p_B reaches the level p_B = V_C = 1400, C will certainly abandon all hope to take private the target.

Clearly, then, $p_B = V_C$ = 1400 is a watershed. One cannot conclude, however, that C will stop counterbidding as of p_B = 1400. Winning the contest is just one possible objective of a counterbid. But C may also counterbid with the purpose to drive up B's price beyond the level V_C = 1400. Suppose that B opens the bidding with p_B = 1400 and that C reacts by a counteroffer of say p_C = 1500. The bidding firm B can react in two ways: either it quits and sells out to C,[4] or it tops C's bid by, say, p_B =

---

2. Note that, if B lets C get away with this and lets the small shareholders tender, B should also tender to C. The price offered, 1350, exceeds the post-bid security value 800 when C is in control. So the buy-out, if it occurs, will be complete indeed.
3. C is better off with the counter-offer relative to selling out to B. There is no claim that the counteroffer makes C better off than before. To the contrary: before B arrived on the scene, C's hand was worth (0.3 x 800) + 600 = 840. Put differently, C would only make such a move to limit the damage caused by the threat of permanent loss of control.
4. Recall that for the moment we live in a world in which bargaining is impossible; if B loses this bidding contest, it can no longer acquire control over the target.

1600. Obviously, if B behaves rationally, it will choose that action that produces the highest value for B's 10% block. B's calculations are simple:
- quitting, and selling out to C at p_C = 1500, yields

0.1 x 1500 = 150.

- coming back with p_B = 1600 offers the prospect of obtaining full ownership; and then the net worth of B's hand amounts to B's valuation (2000) minus the cost of buying 90% of the shares at 1600, i.e.

2000 - (1600 x .9) = 560.

A rational B will therefore decide to top C's offer.

If C understands this process, C continues to top B's offers as long as B can be expected to trump C again, i.e. as long as topping C's offer and winning nets B more than turning around and selling out to C. In fact C can safely bluff with an offer of p_C = 1999 (i.e. marginally less than the value of the target firm to B). For B, winning at the price p_B = 2000 is still marginally better than withdrawing and selling out at p_C = 1999, as is easily verified:
- quitting, and selling out to C at p_C = 1999, yields

0.1 x 1999 = 199.9

- coming back with p_B = 2000 offers the prospect of obtaining full ownership; and then the net worth of B's hand amounts to B's valuation (2000) minus the cost of buying 90% of the shares at 2000, i.e.

2000 - (2000 x .9) = 200.

It is not hard to check that p_C = 1999 is the highest offer that B can trump and still be (marginally) better off winning than losing. The unexpected conclusion from all this is that, *no matter how low the value of the target to C relative to the value to the bidder B, C can drive up the price to the latter level.* In fact, B's only remaining gain is the capital gain on its initial toehold,[5] and without a toehold there is no incentive whatsoever. Conversely, B's potential private benefits are fully reflected (and paid for) in the take-over price.

1.2. The Role of the Option to Re-bid.

The fact that all this is independent of the value of the target to C (or to any next-best bidder, for that matter) is very much at odds with the familiar outcome of a sealed bid auction. Under the present information assumptions, the highest valuation bidder will win the sealed-bid contest, but only pays a price equal to the valuation of the second highest bidder. In other words, if control over the target would have been allocated through a two-player sealed bid auction, B would only have had to pay a price equal to V_C = 1400.

The reason why our outcome is different is that, with a sealed bid auction, no contender can revise his initial offer price. It is easy to demonstrate that, if in the above take-over process company B would not be allowed to revise its original offer, it would likewise not have to pay more than p_B = 1400 for the target company. As before, B would still offer no less than 1400, as a lower price would give C a sure incentive to (irrevocably) take private the firm. However, in the absence of revisions B would not have to offer more

---

5. Before the contest started B's stocks were worth .1 x 800 = 80; we just saw that at the end of the contest B's net benefits amount to 200; the difference is the gain on B's initial toehold, that is 0.1 x (V_B - S_C) = 0.1 x (2000 - 800)). So B still has an incentive to take-over the target.

than 1400 either. For if C would ever launch a counteroffer above 1400, the incumbent management group would end up with full ownership over a company for which it paid more than it can afford -- so C will not do so. Put differently, without revisions C would not have been able to use its bidding-up strategy, because B simply would not be allowed to overtrump C. In short, a mechanism where, like in reality, bidders may revise offers will lead to higher prices than mechanisms whereby such a revision is not possible.

1.3. The Effects of Heterogeneous Perceptions about Values.

Let us add uncertainty about V_B and V_C to the picture. We will first introduce asymmetric information regarding the true value of the target under B's management: V_B is perfectly known to B, but C has only an imperfect idea about this. (We still assume that everybody agrees about V_C.) Such an information asymmetry is advantageous to the bidder. Suppose that C does not drive up the price to the "true" V_B (because C has underestimated V_B, or because of risk aversion); B then gets hold of the target at a price below what it is worth to him, and gains. Suppose, alternatively, that if C overbids (because C is over-optimistic) and offers a price p_C above V_B; then it is very advantageous for B to turn around and sell out, as we have argued before; and B gains again. In short, the less-informed player is likely to lose (and would therefore be prepared to go through the cost of gathering additional information).

If, as we assume, V_C is fully known, B would still have to pay al least V_C = 1400. In addition, C would still bid up the price to some extent above this lower bound, based upon C's estimate of V_B. Hence the basic message remains intact: in a take-over situation without any bargaining opportunity a bidder may expect to have to pay a high price for a target; if there is little

uncertainty about V_B he may have to pay a price equal to his valuation, even if this valuation is much higher than that of other bidders.
In the case in which company B is unsure itself about the exact value of V_B, nothing much changes either. What is important for C in that case is to have a good idea about B's perception of V_B: B's decision whether or not to outbid C depends on that figure. If the incumbent target management has a good understanding of B's expectations, it knows how far it may go with its bidding-up strategy.

As a final remark, note that in all these arguments V_C has not played a major role. In our current setting, uncertainty about the exact value of V_C is relatively unimportant; what matters is the knowledge of whether or not V_C is lower than V_B. If C's view on V_C is higher than B's view on V_B, that would offer B the opportunity to play the same type of bidding-up strategy that C played in our numerical example. That is, if company C thinks it is the better bidder, roles are reversed and B can scare the incumbent management into taking the target company private at its own valuation V_C. In corporate parlance, this is greenmail. From the market's point of view, this amounts to paying back to the shareholders the private benefits from which they were wrongfully excluded before.

All this (artificially) assumed away the possibility of negotiations between B and C. We will see now that if bargaining is possible the situation of the bidder generally improves dramatically.

2. Take-over prices in a world with bidding and bargaining

Let's go back to the moment where corporation B is just launching its initial offer, and let's add bargaining as an option. This new option means that the winner of the bidding contest needs not remain in control for ever and a day; or, in other words, B now understands that it is not necessary to immediately outbid C in order to gain control over the target. Instead B may find it beneficial to let C win the bidding contest and afterwards negotiate about purchasing the target. As B's valuation of the target is higher than C's, a rational C would be prepared to sell during such negotiations in return for a share in the gains that B can achieve. Put differently, both B and C stand to gain from a negotiated transfer of the target if they can agree upon a price in between $V_C = 1400$ and $V_B = 2000$.[6]

To simplify things, let us initially assume that, at the moment company B launches its initial offer, both B and C anticipate what this negotiated price will be; for instance, this negotiated price p_N could amount to $p_N = 1700$ (B and C split the difference $(V_B - V_C)$)[7]. Obviously, in reality the estimate of p_N would be subject to error. However, we will see later on that also here the basic mechanism of the process is not affected by uncertainty about the negotiated price p_N.

---

6. Notice that at the time the negotiations start, the price at which C bought out the small shareholders is a sunk cost and hence, from a purely economic perspective, should not have any impact on the bargaining talks. Bygones are bygones, and all what matters is what B and C can get out of the company in the future.
7. The interpretation of p_N is similar to that of p_C or p_B, i.e. price per share times total number of shares.

2.1. The Solution: B Publicly Offers the Expected Negotiations Price.

It is not hard to see that presently C's bidding-up strategy will be considerably less effective than before. As long as C offers a price p_C that remains below the anticipated bargaining outcome $p_N = 1700$, a rational B will react as before, by increasing its offer price above C's. However, as soon as C offers a p_C higher than 1700, say $p_C = 1800$, it is in B's best interest to withdraw from the contest and sell out to C at 1800, and afterwards buy the entire target for $p_N = 1700$ during negotiations. Clearly from C's point of view, purchasing first 70% of the target's shares at $p_C = 1800$ and afterwards selling out to B for $p_N = 1700$ is not very appealing. Hence a rational C would not drive up the public bidding price above $p_N = 1700$. On the other hand, C would not allow B to gain control at a bid price below $p_N = 1700$ either. If C lets B get way with a public bid at say $p_B = 1600$, B ends up with 70% of the shares, and C is no longer in a position to negotiate. That is, all C would own in the latter case would be a minority stake in the target worth $0.3 \times S_B = 0.3 \times 1300 = 390$, or, if C sells out too, $0.3 \times 1600 = 480$. C would therefore have an incentive to top B's bid and force the acquiror to pay more than 1600. For example, if C bids 1699 and B comes back with 1700, C's block is worth $.3 \times 1700 = 510$. To sum up, the best the incumbent management group of the target can do in the present situation is drive up the public bidding price to the anticipated bargaining price $p_N = 1700$.

But once B offers $p_B = p_N = 1700$, there is no longer any point in going explicitly through the whole process (C winning the public bidding contest at $p_C = p_N = 1700$ and afterwards negotiating with B and selling out again at $p_N = 1700$). So as soon as B offers a $p_B = p_N = 1700$, C may as well sell out

during public bidding and let B win control immediately.[8] If, as in reality, negotiations take time and cause delays in settling the take-over problem, both B and C would even be strictly better off if the take-over process does not (explicitly) proceed into the bargaining stage. In such a case, no explicit negotiations would take place, and only public bidding would be observed; nevertheless the price B pays to achieve control would be determined by the (potential) negotiations process, and would equal the anticipated negotiated price!

The key idea is that C bids up B's public offer price to the level the incumbent target management expects if there would be explicit negotiations with B. In this setting, take-over prices are likely to be lower than in the fictitious world of section 1. If B's bargaining position is strong and the split-the-difference outcome therefore out of the question, the bidder may not even have to pay much more than the incumbent target management's own valuation V_C. And if B is better off, C (and the third shareholders) are worse off. But C has no choice, and is simply forced to go along in this bidding-and-(implicit)-bargaining process: if C overplays its hand and offers more than 1700 in a public bid, B sells out and then takes over the whole target at 1700.

The two main conclusions of this section so far are that:

- the observed offer price of a winning (hostile) public bid actually is a bargaining price although (generally) no negotiations are observed explicitly;
- generally the bidder pays a price between V_C and V_B, a price that depends upon his (implicit) relative bargaining strength.

---

8. When small shareholders are offered the price $p_B = 1700$, it is in their best interest to tender their shares, as the post bid value of these securities will only be equal to $S_B = 1300$.

2.2. Uncertainty about the Values of the Target to the Respective Contenders

Uncertainty and especially asymmetric information about V_B and/or V_C is likely to create uncertainty about p_N too. The arguments of section 1 can be reinvoked to show that uncertainty and/or asymmetric information about p_N has exactly the same effects as uncertainty and/or asymmetric information about V_B in the world of section 1. We conclude again that imperfect information is likely to be more disadvantageous for the target's current Board than for the bidder.[9]

2.3. Negotiations *before* the Bidding Contest.

Thus far, negotiations (if any) were assumed to take place after a hostile bidding contest. Van Hulle and Sercu [1990] consider also negotiations that precede public bidding. Taking the outcome of post-bid negotiations as a reference point, they find that pre-bid negotiations are entirely neutral for all parties concerned as long as the group currently in control is paid no more than the third shareholders. The snag is that pre-bid negotiations do offer ample opportunities for (disguised) discrimination against the small shareholders. One example of such a conspiracy is that, in return for C accepting a lower public offer price, B signs a nice transfer pricing deal with another company held by C; or C is allowed to remain on the target's board and enjoy other abnormal perks. This is obviously to the third shareholders' disadvantage.

* * *

9. This assumes that $V_C < V_B$; otherwise the roles may be reversed just as in section 1).

The main message of this section is that take-over prices are determined by bargaining processes even if these negotiations are not actually observed. We now turn to a discussion of some factors that may have an impact on the strength of B and C's bargaining position.

3. Factors affecting Bargaining Strength in the Bidding-and-(Implicit)-Bargaining Process.

We showed in section 2 that, unless bargaining is outlawed, take-over prices are essentially determined by the option to negotiate. In this (implicit) bargaining stage C negotiates with B after a successful public of C. Taking as our null hypothesis that equally strong negotiators will sooner or later simply split the difference,[10] we define the strength of B's (C's) bargaining position as the extent to which B (C) is likely to force a deviation from the split-the-difference rule. In particular, if the negotiated take-over price p_N is likely to be below (above) $(V_B - V_C)/2 = 1700$, we say that B (C) has a stronger bargaining position than C (B). We will now discuss some factors that may influence B and C's the strength of B and C's position in this bargaining situation.

3.1. The Concepts of Time Value and "Time Pressure"

In the (generally implicit) bargaining situation of section 2, C acquires control of the target during a public bidding contest, and negotiates with B about the distribution of the difference in B's and C's valuation, $(V_B - V_C)$. One of the tactics that B and/or C may use is to stall the negotiations, or threaten to do so. Hence the negotiating parties may face the prospect of

10 See Binmore *et alii* (1986).

time passing by, thereby postponing the realization of the increase in value. Such delays not only causes loss of time value of money: they may even endanger the very realization of the improvement. Indeed, the prospective acquiror company may be in a position where it needs to act quickly to turn its projected benefits into actual profits.

In most financial situations, the time value element itself exerts identical pressures on both B and C: the time value of money is determined by the financial markets and is in principle not company- or investor-specific. Imagine, for instance, two equally well informed investors who negotiate the sale of government bonds. If the deal is clinched immediately, payment and delivery is immediate; and delays would merely mean that the buyer pays for accrued interest to compensate the seller for the time value lost. That is, in present value terms nothing would be gained or lost by delaying the transaction. Hence if pure time value would be the only factor to be taken into account, an equal split of the benefits would still be the normal outcome of the talks.

There is a second element, though, to wit the possibility that the gain (V_B - V_C) may partly or wholly disappear; and this may or may not affect the relative bargaining strengths. For instance, if this gain is a now-or-never and unique opportunity that can only be realized if this specific bidder immediately controls this specific target company, the potential loss of (V_B - V_C) equally affects B and C: failed negotiations imply that this opportunity is gone forever for both of them. But if this gain does not represent a unique and now-or-never opportunity to B or C, the pressure exerted by the clock's ticking and the cake's melting away will be less important for the party with other opportunities. And this should obviously increase that party's relative patience and therefore also its share of the gains. In the next subsection we

discuss how asymmetric time-pressure may lead to a deviation from the split-the-difference solution.

3.2 Competition in the take-over market

Let us consider first a situation in which C is the only target firm B can profitably turn around, while C is in the comfortable position of being coveted by many bidders. In short, we consider a single target and several bidders. Let us denote the "best" bidder by B; any other bidder B' has a valuation $V_{B'} < V_B$. For ease of argument, we again assume perfect agreement: all valuations are known to the control contestants, and if one of the other bidders ever gains control during public bidding and afterwards negotiates with B, the outcome of these negotiations is likewise known from the start of the contest.[11] Since company B is the "best", we would expect it to ultimately take over the target firm; indeed, as long as B has not gained control we would expect the contest to continue, since negotiations would still offer opportunities of mutually beneficial trade. Nevertheless the existence of other bidders implies a lower bound on the price B will have to pay during public bidding; that is, generally it will no longer be sufficient if B just offers the negotiated price p_N of Section 2 (e.g. $p_N = 1700$, in our example). The reason is that p_B must offer no incentive to any other bidder B' to contest the outcome; otherwise some B' would be better off counterbidding with a slightly better price (say 1710), take over the target, negotiate with B and sell out for an even higher negotiated price $p_{B,B'}$ to B (say $p_{B,B'} = 1900$). That is, any competing bidder can adopt the strategy that C followed in Section 2. The critical contender clearly is the potential

11. Adding uncertainty about V_B, S_B, V_C, S_C, p_N, asymmetric information and heterogeneous valuations, transactions costs, taxes, etc. would complicate, but not eliminate, the basic arguments. Since we are mainly interested in an analysis of the impact of the size of initial toeholds on the (implicit) bargaining strength of B and C, we do not pursue these issues further.

bidder B' that has the strongest bargaining position vis-a-vis B. Denoting the anticipated bargaining solution between B and B' by $p_{B,B'}$, the arguments of section 2 then show that this critical B' will bid up the public offer price to $p_{B,B'}$ (for instance 1900, in our previous example). In short, after bringing in bargaining into a contest with many candidates, we are back at the sealed-bid solution that appeared to be discredited by the revisable-bid feature of a pure bidding argument. In the presence of many bidders C will be bought out at a higher price than 1700 because the existence of competing bidders strengthens its bargaining position. Or, on other words, C has a monopoly position and can extract a higher price.

If we reverse the situation, the outcome is reversed too. Let us consider a situation with a single bidder and several alternative targets with respective incumbent management groups C' (i.e. one bidder and several targets), and assume that the bidder is interested in taking over just one target. Before starting any public bidding, B will evaluate the gains it could realize in any of the targets. That is, for every target the acquiring firm estimates first what price it would have to pay if it would be in the take-over situation of section 2. Then one possible decision for B is to go for the target where it expects to make the largest total gains, i.e. its negotiated share in the cake $(V_B - V_{C'})$ plus the capital gain on its initial toehold. Another possible decision is to attack any other target and threaten to walk away from the negotiations unless the incumbent management accepts a price that yields the bidder at least the same total gains as the first strategy. For example, assume that B can gain 500 units by taking over C'; then our original target C is no longer in a position to insist on a take-over value of 1700, as this would net B only a 300 share in the gain $V_B - V_C = 600$ plus a capital gain of 90 on the toehold. In short, C's position is now weakened, because B here is the monopolist facing many small players.

3.3. Financial strength

Thus far we have discovered four possible lower bounds on a successful bid price p_B:

1) p_B must be tempting to the small shareholders;
2) it must leave C better off as compared to the option to take private the target;
3) it must leave C no room to bid up the price (to V_B in section 1, or to $p_N < V_B$ as soon as we realize the importance of potential negotiations); and
4) it must likewise leave no room to any third party to bid up the price (to $p_{B,B'}$).

Bounds (2) and (3) crucially depend on C's ability to finance the purchase of the shares until the negotiated take-over. Bound (4) likewise depends on the ability of B' to temporarily take over the target. And the negotiated price p_N or $p_{B,B'}$ of course assumes that B is able to provide the cash.

One crucial issue, then, is each party's financial strength, defined as its ability to obtain, for whatever period is necessary, the cash needed to implement the strategies outlined before. Without cash or credit lines, C would generally not be capable to counterbid or at least credibly threaten to do so. In the absence of rival bidders B', the effect of such a lack of financial strength would be dramatic. Instead of having to pay a (generally implicitly) negotiated price between V_C and V_B, it would be sufficient for the bidder to offer a price that just suffices to bring the small shareholders to tender. Going back to the numbers in Section 2, for example, B would be able to purchase the target at a price just above lower bound (1), $S_B = 1300$, rather than at $p_N = 1700$. Quick cash at hand also fosters competition among bidders and hence helps to raise the take-over price even more. And, clearly,

financial strength is also relevant to corporation B, which might not have sufficient funds of its own to pay for the target's shares.

It does not matter how the players obtain their cash. Their source may be holdings of marketable securities and the like, or proceeds of spin-offs. In the eighties quick financing usually meant issuing debt, though. The emergence of quick financing mechanisms like junk bonds, bridge loans, and "merchant banking" (in the US sense of the word) clearly have improved the financial strengths of both defendant and bidder(s), and should have contributed to higher take-over prices.

But raising cash is not the only issue; C must also be able to meet the interest bills as long as the ultimate take-over isn't finalized. B has less of a problem here, as B's financing needs (if any) start only *after* the negotiations. This could strengthen B's bargaining situation. Suppose that C's marketable wealth, including possible stakes in other companies, is limited, so that C had to borrow to finance its temporary MBO. B could then maneuver C into a very difficult situation by stalling negotiations: servicing the debt could become a serious problem. Obviously C has the advantage of control over the target firm during negotiations, and can use its share in the target's dividends and its private benefits to service the debt. But if these cash flows do not cover the debt servicing outlays, protracted negotiations may mean financial distress for C. Clearly in this latter case time presses relatively harder on C and hence weakens C's bargaining strength. To what extent C's bargaining strength is reduced depends on many factors, such as the (un)willingness of the creditors to roll over the debt and the bankruptcy laws.

To sum up: once a take-over has started the capital market's capacity to quickly provide large amounts of cash strongly favours the incumbent management's position to drive up the take-over price *and* B's ability to finance the ultimate take-over at a high price. But C is best off if its defense can be mounted with limited borrowing: liquidity problems during the negotiations stage would severely erode C's bargaining position.

3.4. Initial toeholds

In the literature there is no consensus about how the size of initial toeholds affects the take-over price. Some argue that, the more shares one needs to buy of a particular target, the higher the premium one has to offer to bring a sufficient number of small shareholders to part from their shares. In this view, large bidder toeholds would be associated with smaller purchased amounts, and thus with smaller premiums.[12] Others argue the opposite way. Because a large bidder's toehold implies an important financial commitment, the bidder strongly wishes to obtain control in order to realize the take-over gains and the concomitant profit on the engaged funds; this strong wish to win would be reflected in a higher price.[13]

The size of the toehold may also affect the outcome via the bidder's capital gain on its initial toehold. To fully grasp the argument, let us again compute B's gain if the target is taken over at p_N = 1700 and B's stake was 10%. At the end of the game, B holds a company now worth 2000, but to achieve this B had to fork out 1700 x .9 to buy up the 90% of the stock held by others. B's gain, as compared to the initial value of its block (10% of S_C = 800), works out as

---

12. See Stultz [1988].
13. See Dewatripont [1990].

$$[2000 - (.9 \times 1700)] - (.1 \times 800) = 390$$

or

$$[2000 - 1700] + .1 \times (1700 - 800) = 390$$

More in general, then, B's gain has two components. First there is B's share in the cake, viz. the difference of the target's value to B and the price of the company valued at the take-over price p_B -- here (2000 - 1700) = 300. Second there is B's capital gain of (1700 - 800) on 10% of the shares, to wit 90.[14] So, in general, B's gain is

$$(V_B - p_B) + t_B (p_B - S_B)$$

where t_B is B's initial toehold. One interpretation then is that, *for a given* V_B *and* S_C, there is a negative trade-off between toehold and tender price. To achieve the same overall gain of 390 with a toehold t_B of 5%, B would only be willing to offer p_B = 1652.6. (Of course, 390 is a relatively large gain. But similar conclusions hold if B wants to obtain a lower minimal gain.) A subtly different argument is that small toeholds require large value gains $(V_B - S_C)$ if they are to generate the same gains; and large value gains $(V_B - S_C)$ tend to go with higher take-over premiums $(p_B - S_C)$; so ultimately small toeholds again are associated with large take-over prices.[15]

It is clear from our previous arguments that the incumbent management of the target can be considered as one of the bidders too. However, incumbent management's outlook is somewhat different from that of the other bidders: C initially is in control and receives private benefits; also, if C wishes to

---

14. From another angle, the 90 stands for the savings created by the fact that B did not have to pay the premium (1700 - 800) on the 10% already held before the contest started.
15. See Shleifer and Vishny [1986]. This variant is partly a selection mechanism, since we allow V_B to vary. In the first argument, V_B is given.

obtain control, its purpose may not be to change management policies. Apart from this proviso, it is not hard to modify the above arguments to fit the incumbent management's position; some factors would predict that the take-over price is likely to increase as a function of C's initial toehold while other arguments that suggest the reverse.

Our bargaining model sheds a new light on this whole debate. If we carefully think about the meaning of the initial toehold within the negotiations framework Section 2, we see that the toehold's direct impact on bargaining strength is likely to be limited. For C, a large initial toehold means that if all stages in the take-over process of section 2 would be played explicitly, incumbent management would only need to buy up a relatively smaller fraction of the total number of outstanding shares to achieve control. Hence C would need to mobilize less additional financial resources. Put differently, a large initial toehold of incumbent management in its firm is likely to be associated with large financial strength on their part. So one link between initial toehold and bargaining strength may be indirect, via financial strength. For the bidder, this indirect link between initial toehold and bargaining strength is likely to be far less important than for C: if the negotiations stage is played explicitly, C has won the public bidding and hence is burdened with financing the tendered shares until an agreement is reached, whereas B does not have any financing needs until that moment.

Van Hulle and Sercu [1990] also suggest a direct link between C's bargaining strength and C's initial toehold. The factor is the relative performance of the target during the period C is mounting white knight defenses or is negotiating a take-over with B. In fact many practitioners share the belief that, as much of managerial time and effort is consumed by the take-over process, the profitability of the target may dip under its

normal level as long as the control contest lasts. If this is true, it is clear that such a below-normal performance weakens C's bargaining position. As C has much resources tied up in the firm (remember that during the negotiations stage C owns the majority of the shares), a below-normal rate of return on these invested funds may exert strong pressure on C to seek a quick settlement. Hence if the take-over process itself consumes management resources, ownership position during the negotiations stage and bargaining strength would be negatively related. The same factor may also put pressure on B; and the larger B's stake during the negotiations stage, the stronger the pressure will be. But as B's stake, at the moment of negotiations, is far lower than C's, the direct link would essentially work against C rather than against B.

4. Conclusions

This paper argues that in a world in which bidders may use both bidding and bargaining to achieve control over a target, public take-over prices (also in hostile deals) are likely to be determined by bargaining. This bargaining stage however is usually played implicitly rather than actually observed. Consequently the (implicit) bargaining strength would be very important in determining the public take-over price the winning bidder has to pay. Several factors that may influence this bargaining strength have been considered. Some factors are likely to have a profound impact, such as uncertainty about how much value the bidders can obtain from the target, competition in the take-over market, and financial strength of the contenders. The influence of the size of initial toeholds on bargaining strength may be more of an indirect nature.

Bibliography

P. Asquith, R. Brunner and D. Mullins (1983), The Gains to Bidding Firms from Mergers, *Journal of Financial Economics* 11, 121-140;

K. Binmore, A. Rubinstein, and A. Wolinsky (1986), The Nash Bargaining Solution in Economic Modelling, *Rand Journal of Economics*, 17, Summer, 176-188;

M. Bradley, A. Desai and E. Kim (1988), Multiple Bidder versus Single Bidder Take-Overs, *Journal of Financial Economics*, 21, 3-40;

M. Dewatripont (1990), On Takeover Contests and Stock Price Dynamics, working paper, U.L.B. (Brussels, Belgium);

P. Dodd (1980), Merger Proposala, Management Discretion, and Stockholder Wealth, *Journal of Financial Economics*, June, 105-137;

R. Giammarino and R. Heinkel (1986), A Model of Dynamic Takeover Behavior, *The Journal of Finance*, vol. XLI, no 2, June, 465-480;

S. Grossman and 0. Hart (1980), Takeover Bida, the Free-Rider Problem, and the Theory of Corporation, *Bell Journal of Economics*, 11, (Spring) 42-64;

M. Harris and A. Raviv (1988), Corporate Control Contests and Capital Structure, *Journal of Financial Economics*, 20, 55-86;

D. Hirschleifer and S. Titman, Share Tendering Strategies and the Success of Hostile Takeover Bids, Anderson Grad. Sch. of Business, UCLA, 1988;

R. Morck, A. Shleifer, and R. Vishny (1988), Alternative Mechanisms for Corporate Control, *N.B.E.R. working paper*, no 2532;

R. Morck, A. Shleifer, and R. Vishny (1989), Do Managerial Objectives Drive Bad Acquisitions ? , *working paper University of Chicago*;

D. Scharfstein (1988), The Disciplinary Role of Takeovers, *Review of Economic Studies*, 55, 185-199;

P. Sercu and C. Van Hulle (1990), On Bidders' Incentives in Multi-Stage Takeover Bids, *working paper*, D.T.E.W., K.U.Leuven, Belgium;

A. Shleifer and R. Vishny (1986), Large Shareholders and Corporate Control, *Journal of Political Economy*, 94(3), 461-488;

A. Shleifer and R. Vishny (1988), Value Maximisation and the Acquisition process, *Journal of Economic Perspectives*, vol 2, no 1, 7-20;

Sutton (1986), Non-Cooperative Bargaining Theory: An Introduction, *Review of Economic Studies*, LIII, 709-724;

R. Stultz (1988), Managerial Control of Voting Rights. Financing Policies and the Market for Corporate Control, *Journal of Financial Economics*, 20, 25-54;

C. Van Hulle and P. Sercu (1990), Negotiations and the Distribution of Take-over Gains, *working paper*, D.T.E.W., K.U.Leuven, Belgium.